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	First Named Inventor	Geoffrey R. Morris
	Art Unit	3753
	Examiner Name	John K. Ford
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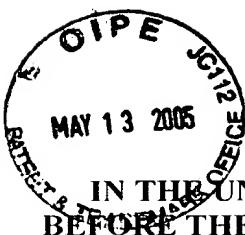
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Date	May 11, 2005

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Patent Examiner: John K. Ford :
: **HEAT EXCHANGE ASSEMBLY**
Group Art Unit: 3753 :
:
In re application of: :
GEOFFREY R. MORRIS :
:
Serial No.: 09/674,256 :
Filed: December 22, 2000 : Attorney Docket No. 282318-00008

REPLY TO EXAMINER'S ANSWER

May 11, 2005

Commissioner For Patents
MAIL STOP APPEAL BRIEF - PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Examiner's Answer, dated March 11, 2005, Appellant files this Reply.

Status of the Claims

Claims 1-5, 12 and 14-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, *Saperstein et al.*, U.S. Patent No. 5,242,015.

Claims 1-5, 12 and 14-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saperstein* in view of JP 61-202084.

Claims 9 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Saperstein* or *Saperstein*/JP '084 and further in view of *Kennon*, U.S. Patent No. 6,173,767.

Appellant notes with appreciation the explicit withdrawal of the rejection predicated on AU-B-68020/98 and the allowance of claims 12, 14, and 15.

Appellant further notes that, although the Examiner's Answer has included new arguments not found in the final rejection, the Examiner has not designated these arguments as a "new ground of rejection" as required by 37 C.F.R. § 41.39(b). As the Examiner has not designated a new ground of rejection, Appellant does not have the right to request that prosecution be reopened under 37 C.F.R. §

41.39(b)(1). However, as these new arguments were not included in the any Office Action prior to the Notice of Appeal, Appellant has not had the opportunity to present the attached Exhibits. Thus, the Examiner has, procedurally, placed the Appellant at a disadvantage. That is, by presenting a new argument, but neglecting to include the required designation of a "new ground of rejection," the Examiner has foreclosed the possibility of Appellant providing evidence to counter the new arguments. Accordingly, Appellant requests that the Board accept the attached Exhibits or, if the exhibits are not accepted, reopen the prosecution under 37 C.F.R. § 41.39(b)(1).

ARGUMENT

THE EXAMINER HAS IMPLICITLY WITHDRAWN THE REJECTION OF CLAIMS 1-5, 12 AND 14-16 UNDER 35 U.S.C. § 102(B), AND EFFECTIVELY REBUTTED THE REJECTION OF CLAIMS 1-5, 12 AND 14-16 UNDER 35 U.S.C. § 103(A), BASED ON *SAPERSTEIN*.

With regard to the rejections based on the *Saperstein et al.* reference (U.S. Patent No. 5,242,015), the Examiner has introduced a confusing argument and now asserts that the Appellant's response to that argument is irrelevant. That is, in response to the Appellant's argument discussing and equating the definition of the words "sheet" and "panel," the Examiner has stated that he, "assumes counsel reads his claims and knows the words within them," and that, "the claims do not claim a flat panel." Answer at 5 and 7. Although the claims recite a plurality of "sheets," the original rejection based on *Saperstein* does not mention a "sheet" and specifically stated that *Saperstein* disclosed a "panel." Now, however, the Examiner asserts that he "never equated the terms 'panel' and 'sheet' as argued here." Answer at 5. As set forth below, if *Saperstein*, which does not mention a "sheet" only discloses a "panel" and "panel" is not the equivalent of a "sheet," then *Saperstein* cannot be used as the basis of the rejections under 35 U.S.C. §102(b) and §103(a).

The Appellant, too, assumes that the Examiner reads a claim prior to providing a rejection, however, to be absolutely clear the Appellant sets forth the original Claim 1 below:

1. A heat exchange assembly including:-
 - an internal passageway formed between a pair of spaced substantially parallel internal **sheets**, and
 - respective external passageways formed between each said internal **sheet** and a respective external **sheet** spaced from and

substantially parallel to a respective internal **sheet**;
said pair of internal **sheets** at the ends of said internal
passageway extending beyond said external **sheets** at the ends of said
external passageways thereby facilitating fusion welding to said internal
sheets at the ends of said internal passageway, and said internal
passageway or said external passageways being adapted to receive or
contain a gas for effecting heat exchange with a fluid in the other of said
internal passageway or said external passageways.

Application, page 12 (emphasis added). It is especially noted that the word “panel” does not appear anywhere in independent claim 1 and only in the preamble to independent claims 12 and 16.

The original rejection of Claims 1-8 and 11-16 under 35 U.S.C. § 102(b) based on *Saperstein*, Figures 6-8 reads in its entirety:

In Figures 6-8 the subject matter claimed is clearly disclosed. For the purposes of this rejection extrusion 100 of *Saperstein* is deemed to be a “panel”. A “panel” is a flat, usually rectangular piece forming a part of a surface.

Office Action, dated September 9, 2002, at 2. Again, this is the *entire* rejection. Appellant further notes that *Saperstein* does not include the word “sheet.” See Exhibit 1, (which is a screen shot of the USPTO web site having the *Saperstein* reference displayed and further showing a text search for the word “sheet” having no results). Further, as detailed below, Appellant does not agree that the *Saperstein* reference discloses a “panel,” however, for the sake of argument, in this section alone, Appellant will consider *Saperstein* element 100 to be a “panel.”

Finally, Appellant notes that, “a claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.... The identical invention must be shown in as complete detail as is contained in the ... claim.” See, MPEP §2131 (citing, *Verdigaal Brothers v. Union Oil Company of California*, 814 F.2d 628, 631 (Fed. Cir. 1987) and *Richardson v. Suzuki Motor Company*, 868 F.2d 1226, 1236, (Fed. Cir. 1989)).

Thus, Appellant was presented with the following situation:

- Claim 1 did (and does) not include the word “panel” but did recite “sheets”;
- The Examiner set forth the rejection based on *Saperstein* as being under 35 U.S.C. § 102;
- A rejection under 35 U.S.C. § 102 requires that “each and every

element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference”;

- The *Saperstein* reference does not include the word “sheet”; and
- The Examiner explains that the rejection based on *Saperstein* is predicated on *Saperstein* having a “panel.”

Accordingly, Appellant concluded that the Examiner was asserting that a “panel” was the equivalent of a “sheet.”

To the extent that the Examiner now has specifically stated that he “never equated the terms ‘panel’ and ‘sheet’ as argued here,” (Answer at 5) the Examiner has implicitly withdrawn the rejection of Claims 1-5, 12 and 14-16 under 35 U.S.C. § 102(b). That is, as a rejection under 35 U.S.C. § 102 requires that “each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference,” *Saperstein* could only be a § 102(b) reference if it disclosed a “sheet.” However, *Saperstein* does not recite a “sheet,” *Saperstein*, according to the Examiner, discloses a “panel.” And, according to the Examiner, a “panel” is not the equivalent of a “sheet.” Thus, the *Saperstein* reference cannot be said to disclose the heat exchange assembly of Claim 1 which recites sheets, but not panels. Accordingly, the Examiner has effectively withdrawn his rejection of Claims 1-5, 12 and 14-16 under 35 U.S.C. § 102(b).

Similarly, the Examiner has undermined his own assertion that Claims 1-5, 12 and 14-16 are obvious under 35 U.S.C. § 103(a) in view of *Saperstein*. Given that *Saperstein* only discloses a “panel” and the Examiner “never equated the terms ‘panel’ and ‘sheet’”, it is unclear how the “panel” of *Saperstein* makes the “sheets” recited in Claim 1 “obvious.” That is, if the Examiner never equated a “panel” and a “sheet,” there is nothing in *Saperstein* that would lead one skilled in the art to equate a “panel” and a “sheet.” If one skilled in the art would not equate a “panel” and a “sheet,” the claimed invention cannot be obvious in view of *Saperstein*.

Accordingly, based on the Examiner’s statements, the rejection of Claims 1-5, 12 and 14-16 under 35 U.S.C. § 102(b) as being anticipated by, or in the alternative under 35 U.S.C. § 103(a) as obvious over, *Saperstein* should be withdrawn.

THE EXAMINER HAS ACCUSED THE APPELLANT'S ATTORNEY OF ENGAGING IN "DICTIONARY SWAPPING" TO MISLEAD THE BOARD WHEN IN FACT THE EXAMINER HAS MADE INACCURATE STATEMENTS TO THE BOARD

The Examiner has further stated that the Appellant's attorney has "engaged the Examiner and the Board in a bit of dictionary swapping to make his argument a colorable one." Answer at 5. The undersigned Appellant's attorney notes that definitions from two different dictionaries were used. The definition of "manifold" was taken from the Webster's New Twentieth Century Dictionary, Unabridged, 2nd Edition. *See* Exhibit 2. The definition of "sheet" was taken from the Cambridge Online Dictionary located at, <http://dictionary.cambridge.org/>. *See*, Exhibit 3. In response to the Examiner's request, the Appellant's attorney further provided the definition of "sheet" from the Webster's New Twentieth Century Dictionary, Unabridged, 2nd Edition. *See*, Exhibit 4. The Examiner has further asserted that the Cambridge Online Dictionary is a "children's dictionary" and a dictionary "for elementary students or junior high school students." Answer at 5. Appellant will address these assertions in turn.

Regarding the assertion that Appellant's attorney attempted to mislead the Board, Appellant's attorney states that under the Rules of Professional Conduct it is an attorney's duty to "zealously assert the client's position." *See*, Pa. R.P.C. preamble, para. 2 (amended), attached as Exhibit 5. Thus, if one dictionary provides a definition that better supports the proper interpretation of the language used in a claim, it is the attorney's duty to use that definition. Moreover, the Examiner has not cited a single reference or case to support his proposition that only one dictionary, the Webster's New Twentieth Century Dictionary, Unabridged, 2nd Edition, is the sole, binding authority for defining language used in claims. As evidenced by Appellant's use of more than one dictionary, it is clear the Appellant does not consider this version of Webster's to be a singular authority for defining words.

Regarding the Examiner's assertion that the Appellant's attorney used the definition of "sheet" from a "children's dictionary," Appellant notes that the dictionary in question, the Cambridge Advanced Learner's Dictionary, is the default choice when one uses the Cambridge Dictionary located at <http://dictionary.cambridge.org/>. *See*, Exhibit 6. The primary title on this web page is "Cambridge Dictionaries." Nowhere does this title imply a "children's" dictionary.

The page further notes, in an advertisement in the upper left, that the dictionary is used by those learning English. While children may be interested in learning English, there is nothing on the web page indicating that the link to the "Advanced Learner's" dictionary is a children's dictionary. Thus, as absolutely nothing on the Cambridge Online Dictionary web site suggests that it is intended for "elementary students or junior high school students," it appears that the Examiner has, at the very least, made inaccurate statements to the Board. Moreover, even if the Cambridge Advanced Learner's Dictionary was intended for children, it does nothing to bolster the Examiner's argument that a sheet is not flat (as discussed below). That is, the Examiner has not stated that the definition of "sheet" from the Cambridge Advanced Learner's Dictionary is wrong, only that it is different from another dictionary.

Accordingly, the Examiner has not established that the Appellant has engaged in any unethical behavior or that the dictionaries used by the Appellant are inaccurate.

THE EXAMINER ASSERTS THAT THE BROADEST REASONABLE
INTERPRETATION OF THE WORD "SHEET" IS CONSISTENT WITH A COILED
TUBE, BUT NOT A FLAT PANEL.

Appellant has argued that by using the word "sheet" in the claims, the claims recite a flat structure. Based on the fact that a single dictionary does not include the word "flat" in the definition of the word "sheet," the Examiner contends that "the broadest reasonable interpretation" of the word "sheet" is not a flat structure and may even be a coil. That is, despite the fact that the claims recite "a pair of spaced substantially parallel ... sheets," the Examiner has concluded that "the extrusion 100" disclosed in *Saperstein* is a "flat panel" which anticipates, or makes obvious, the presently claimed sheets. See, Office Action dated September 9, 2002 at 2.

The "extrusion 100" of *Saperstein* that the Examiner determined to be a "flat panel" is shown in Figure 5, reproduced below.

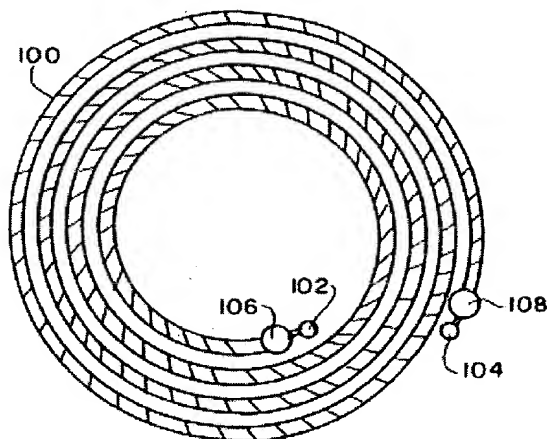


FIG. 5

In the Examiner's words, "[f]or the purposes of this rejection extrusion 100 of Saperstein is deemed to be a 'panel'. A 'panel' is a flat, usually rectangular piece forming a part of a surface." Office Action, dated September 9, 2002, at 2. The Examiner, however, disregards this figure and focuses on the cross-sectional view of Figure 6, reproduced below.

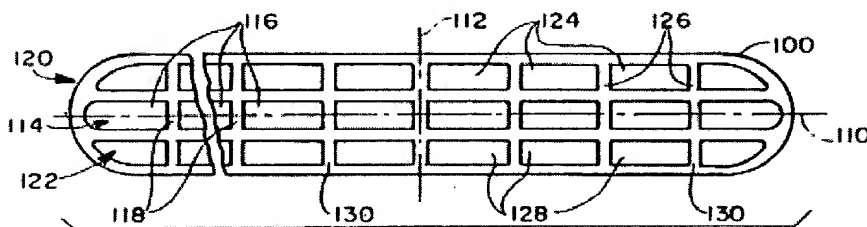


FIG. 6

The Examiner further asserts that, "the extrusion of Saperstein **must necessarily be** flat prior to bending". Answer at 6 (underlined emphasis in original, bold emphasis added). The assertions of the Examiner will be addressed in turn below.

Regarding the assertion that, because the definition of the word "sheet" in the Webster's New Twentieth Century Dictionary, Unabridged, 2nd Edition does not include the word "flat," the "broadest reasonable interpretation" of the word "sheet" includes objects having any shape, up to and including a coil, Appellant notes the following. First, the Examiner has emphasized only a portion of the proper standard. As set forth in MPEP 2111, the standard in its entirety reads, "during patent

examination, the pending claims must be "given the broadest reasonable interpretation **consistent with the specification**." *Id.* (citing *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000) (emphasis added)). Thus, in this application, the Examiner was not limited to the mere usage of the word "sheet" but was obligated to utilize the entire specification, including the figures, while determining the "broadest reasonable interpretation" of the claims. As identified in the specification by reference numbers 16 and 17, the sheets as shown in Figure 4 are clearly flat. Moreover, a review of the specification as a whole further makes it clear that the "sheets" are indeed flat. Accordingly, had the Examiner given the word "sheet" the broadest reasonable interpretation *consistent with the specification*, the Examiner should have determined that the word "sheet" as used in the claims recited a flat structure.

Second, the Appellant notes the following eleven definitions of the word "sheet." These definitions were obtained through the www.onelook.com meta-dictionary website. That is, the www.onelook.com web site is structured to search other dictionary web sites. To ward off any assertion by the Examiner that Appellant is engaging in "dictionary swapping," Appellant has simply selected the definitions from the first ten dictionaries as identified by the www.onelook.com. Initially, the www.onelook.com site includes a "quick definition" that states a sheet is "a **flat** artifact that is thin relative to its length and width." *See*, Exhibit 7 (emphasis added). The selected dictionaries include the following definitions:

- The Merriam-Webster Online Dictionary - "5a: a portion of something that is thin in comparison to its length and breadth b: a **flat** baking pan of tinned metal <a cookie sheet>." *See*, Exhibit 8 (emphasis added).
- The Compact Oxford English Dictionary - "2 a broad **flat** piece of metal or glass." *See*, Exhibit 9 (emphasis added).
- Encarta® World English Dictionary, North American Edition - "2. flat thin rectangular piece: a broad **flat** thin piece of a material, especially a rectangular piece of paper, metal, or glass." *See*, Exhibit 10 (emphasis added).
- Cambridge International Dictionary of English - "a large thin **flat** especially rectangular piece of something." *See*, Exhibit 3 (emphasis added).

- The Wordsmyth English Dictionary-Thesaurus - “2. a **flat**, broad covering or expanse.” *See*, Exhibit 11 (emphasis added).
- The American Heritage® Dictionary of the English Language – “3. A broad, **flat**, continuous surface or expanse.” *See*, Exhibit 12 (emphasis added).
- Infoplease Dictionary – “material, as metal or glass, in the form of broad, relatively thin pieces.” *See*, Exhibit 13.
- Dictionary.com - “A broad, **flat**, continuous surface or expanse.” *See*, Exhibit 14 (emphasis added).
- Online Etymology Dictionary - “any broad, **flat** surface” (of metal, open water, etc.) is from 1592.” *See*, Exhibit 15 (emphasis added).
- UltraLingua English Dictionary – “A **flat** man-made object that is thin relative to its length and width.” *See*, Exhibit 16 (emphasis added).

Thus, out of ten separate dictionaries searched by the www.onelook.com site, nine of the dictionaries include the word “flat” to describe a “sheet.”

Moreover, it is noted that the Examiner has not produced a dictionary definition that would support his contention that a coil is a “flat panel” or a “sheet.” The Examiner has merely stated that the definition of “sheet” in the Webster’s New Twentieth Century Dictionary, Unabridged, 2nd Edition, does not include the word flat. The Examiner has noted that the Webster’s New Twentieth Century Dictionary, Unabridged, 2nd Edition, definition of the word “sheet” does, however, state, that “sheet” means “a broad, thin, usually rectangular piece of any material, as glass, plywood, tin, etc.” Exhibit 2. Appellant notes that by definition, a broad, thin, usually rectangular piece of material, such as plywood, is not shaped as a coil.

Regarding the Examiner’s statement that, “the extrusion of Saperstein **must necessarily be** flat prior to bending”. Answer at 6 (underlined emphasis in original, bold emphasis added), Appellant notes that the Examiner has provided absolutely no support for this statement. First, Appellant notes that in *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 177-78 (CCPA 1967), the court held that, “[a] rejection based on section 102 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art.... The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because *it may doubt* that the invention is patentable, resort to speculation, unfounded

assumptions or hindsight reconstruction to supply deficiencies in its factual basis” (emphasis in original). Additionally, in *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988), the court notes that the PTO has the burden of establishing a *prima facie* case of obviousness. The court then noted that the Examiner in that case had failed to show the requisite teaching or suggestion in the cited references and that the Examiner’s “bald assertion” without any support or explanation did not satisfy the Examiner’s burden. See, 5 U.S.P.Q.2d at 1599.

Appellant further notes that extrusions may be, or may not be, flat depending upon the material being extruded, and the method used to create the extrusion. Appellant does not know how the hose of *Saperstein* was created, but notes that hoses are typically a plastic disposed on a web of fabric. Moreover, Appellant notes that such extruded hoses are known to curl following extrusion and that such hoses may be cooled on a drum, that is, in a non-flat configuration. See Exhibit 17, “A Proposal for Spreading Base Web During Melt Extrusion,” Paper, Film and Foil Converters, April 2001. In his Answer, the Examiner has simply made a “bald assertion” that the extrusion of *Saperstein* “must necessarily be flat prior to bending.” Appellant further notes, however, that *Saperstein* does not mention the word “bending.” As such, the Appellant wonders why the Examiner believes that the extrusion of *Saperstein* was ever flat. In any event, it is clear that the Examiner has not supported his statement that an extrusion is “inherently flat when it is made” (Answer at 7) and that evidence shows that some extrusions are not flat (See, Exhibit 17). Thus, the Examiner has resorted “to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in [his] factual basis” and has failed to establish a *prima facie* case to support the rejection.

THE EXAMINER HAS FAILED TO REBUT THE ARGUMENTS SET FORTH IN THE
APPELLANT BRIEF

As set forth in Appellant’s Brief, independent Claim 1 recites a heat exchanger having passageways formed by parallel sheets. As discussed in detail above, *Saperstein* discloses a heat exchanger comprising a coil. As such, *Saperstein* fails to disclose, or even suggest, a heat exchanger having passageways formed by parallel sheets, and the Examiner’s rejection of this claim under 35 U.S.C. § 102(b), or in the

alternative under 35 U.S.C. § 103(a), is in error. As to the remaining claims recited in this rejection, Appellant relies on the arguments set forth in Appellant's Brief.

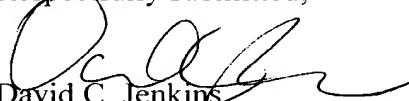
The Examiner has again relied on DT 2543326 for the proposition that not all panels are flat. More specifically, the Examiner has indicated the element associated with reference number 9, identified in the specification as "gebogenen Platten," is a "curved panels." Appellant notes that the phrase "gebogenen Platten" is translated as "bent plate." Appellant agrees that if the specification or claims of the present application had identified sheets as being "bent" or "curved panels," the sheets recited in the claims would not necessarily be flat. However, in both the specification and the claims of the present application, the word "sheet" is not modified by any adjective. Thus, the Examiner's contention that the sheets as recited in the claims may not be flat is baseless.

With regard to the rejections under 35 U.S.C. § 103(a), the Appellant notes that the Examiner has misstated the holding of *In re Dillon*, 16 USPQ2d 1897 (1990). That is, the Examiner states that in *Dillon* the court "definitively established that the motivation [to combine references] need not explicitly be found in the references themselves." *Dillon*, a case involving a chemical patent, actually states that in order to establish a *prima facie* case of obviousness, there does not have to be "a suggestion or expectation from the prior art that the claimed compound will have the same or similar utility as one newly discovered by the applicant." *Id.* at 1901 (emphasis in original). However, when discussing the proper standard for combining prior art, the court stated that, "where the prior art gives a reason or motivation to make the claimed compositions, [it] creates a *prima facie* case of obviousness" *Id.* In other words, the *Dillon* court was using the standard set forth in *In re Geiger*, 815 F.2d 686, 2 U.S.P.Q.2d 1276 (Fed. Cir. 1987), stating that, "obviousness cannot be established by combining teachings of the prior art to produce the claimed invention, *absent some teaching, suggestion, or incentive supporting combination*" (emphasis added). Thus, the Examiner has failed to cite any legal authority that contravenes the legal standard set forth in Appellant's Brief. See, Appellant's Brief at 7-8 (citing *In re Geiger*, *Rite-Hite Corp. v Kelly Co.*, 629 F.Supp. 1042, 231 U.S.P.Q. 161, *aff'd* 819 F.2d 1120, 2 U.S.P.Q.2d 1915 (E.D.Wis. 1986) and *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991)). Moreover, the Examiner has failed to show anywhere in the cited references where such a *teaching, suggestion, or incentive* supporting his combination of references is located.

CONCLUSION

It is again submitted that Claims 1-5, 12 and 14-16 are not anticipated by, and are patentable over, *Saperstein*. It is further submitted that Claims 1-5, 12 and 14-16 are patentable over *Saperstein* in view of JP 61-202084. It is further submitted that Claims 9 and 10 are patentable over *Saperstein* or *Saperstein*/JP '084 and further in view of *Kennon*, U.S. Patent No. 6,173,767. Therefore, it is requested that the Board reverse the Examiner's rejections of Claims 1-5, 9, 10, 12 and 14-16 and remand the application to the Examiner for the issuance of a Notice of Allowance.

Respectfully submitted,



David C. Jenkins

Registration No. 42,691

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Attorney for Appellant

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(1 of 1)

United States Patent
Saperstein, et al.

5,242,015
September 7, 1993

Heat exchanger

The high cost of fabricating heat exchangers has been minimized by utilizing an extrusion (14) wound upon itself with adjacent convolutions (10, 16, 20, 24) spaced at (20) and located within a housing (10). A baffle (56) or a seal (82, 84) are employed within the housing (10) to respectively define cross current or countercurrent heat exchangers. Alternatively, an extrusion such as a unitary extrusion (100) may contain plural flow paths (150, 152) bonded together and having flow paths (162, 164) may be employed.

Inventors: Saperstein; Zalman P. (Lake Bluff, IL); Hughson; Leon A. (Racine, WI)

Assignee: Modine Manufacturing Co. (Racine, WI)

Appl. No.: 748673

Filed: August 22, 1991

Current U.S. Class: 165/163; 165/164

Intern'l Class: F28D 007/04; F28D 007/10

Microsoft Internet Explorer

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Start David Jenkins PIZZEYS: REPL PIZZEYS: 2ND PIZZEYS: AME PIZZEYS: APPE United States 9:30 AM

Mangifera

that separates the manger from the rest of the deck.

Man'gí'e rá, *n.* [from *mango*, and *L. ferre*, to bear.] a genus of Asiatic trees of the cashew family, of which the mango is a type.

man'gí'ly, *adv.* in a mangy manner.

man'gí'ness, *n.* the quality or condition of being mangy.

man'gle, *v.t.*: mangled, *pt.*, *pp.*: mangling, *ppr.* [Anglo-Fr. *mangler*, *mahangler*, freq. of OFr. *mehaigner*, to maim.]

1. to mutilate or disfigure by repeatedly and roughly cutting, tearing, hacking, or crushing; to lacerate and bruise badly; as, the body was mangled beyond recognition.
2. to spoil; botch; mar; garble; as, the text was mangled.

Syn.—tear, mutilate, lacerate.

man'gle, *n.* [D. *mangel*, a mangle; LL. *mangonum*, *mango* (-onis), from Gr. *mangonon*, a war engine for throwing stones.] a machine for pressing and smoothing cloth, especially sheets and other flat pieces, between rollers.

man'gle, *v.t.*: mangled, *pt.*, *pp.*: mangling, *ppr.* to press in a mangle.

man'glér, *n.* one who uses a mangle.

man'glér, *n.* a person or thing that mangles, or mutilates.

man'gle rack, a mechanical device for changing circular motion into reciprocating motion in a straight line, first put into common use in the mangle.

man'gle wheel (hwēl), the wheel in the mangle rack which receives reciprocating motion from a continuously rotating pinion.

man'gō, *n.*: *pl.* man'gōes, man'gōs, [Malay *mangga*, the mango.]

1. a yellow-red, oblong tropical fruit, *Mangifera indica*, with a thick rind, somewhat acid and juicy pulp, and a hard stone; it is eaten when ripe, or preserved or pickled when unripe.
2. the tree that it grows on.
3. pickled muskmelon or cucumber.

man'gō bird, the yellow oriole, *Oriolus kundoo*, found in India.

man'gō fish, a fish, the tupsee of India.

man'gōld-würzel, *n.* same as *mangel-wurzel*.

man'gō nel, *n.* [OFr. *mangonel*, from LL. *mangonellus*, a mangonel.] a military apparatus formerly used for throwing stones, etc.

man'gō stan, *n.* same as *mangosteen*.

man'gō steen, *n.* [Malay *mangustan*.] a tree, *Garcinia mangostana*, of the tropics; also, its fruit.

wild mangosteen; a closely-branched tree, *Disopyros embryopteris*, of the East Indies.

man'gō tree, the tree, *Mangifera indica*, bearing the mango.

man'gröve, *n.* [from Port. *mangue* or Sp. *mangle*, (from the W. Ind. name.) any of a group of tropical trees or shrubs growing in swampy ground along river banks, with branches that spread and send down roots, thus forming more trunks and causing a thick growth.

man'gröve hen, the salt-water marsh hen, *Rallus longirostris*, of the West Indies.

man'gröve snap'pér, a fish, *Lutjanus griseus*; called also *hastard snapper*.

ma'ngue, *n.* [Fr., from native name.] a carnivorous animal of Africa related to the civets, the *Crossarchus obscurus*.

man'gy, *a.*: comp. mangier; *superl.* mangiest.

1. having, infected with, resembling, or caused by the mangle.
2. shabby and filthy; sordid; squalid.
3. mean and low; despicable.

man'hä'den, *n.* same as *menhaden*.

man'han'dle, *v.t.*: manhandled, *pt.*, *pp.*: manhandling, *ppr.* 1. to move or do by human strength only, without machines. [Rare.]

2. to handle roughly.

Man'hat'tän, *n.* 1. any member of a tribe of Algonquian Indians who lived on Manhattan Island.

2. a cocktail made of whisky and vermouth, usually with a dash of bitters and a maraschino cherry.

man'höle, *n.* a hole through which a man can get into a drain, subway, or parts of machinery, to inspect or repair it.

man'hood, *n.* 1. the state or time of being a man (human being or, especially, adult male human being).

2. manly character or qualities; virility; courage, resolution, etc.
3. men collectively.

man'-hour' (-our'), *n.* a unit of work, equal to that done by one man in one hour.

man'hunt, *n.* a hunt or search for a man or men, especially for a fugitive.

Manila

man'hunt'ér, *n.* one who leads, or takes part in, a manhunt; a detective; an investigator.

mā'ní-ä, *n.* [L., from Gr. *mania*, madness, from *mainesthai*, to rage.]

1. wild or violent insanity; specifically, the manic phase of manic-depressive psychosis, characterized generally by abnormal excitability, exaggerated feelings of well-being, flight of ideas, excessive activity, etc.
2. an excessive, persistent enthusiasm, liking, craving, or interest; obsession; craze; as, a *mania* for collecting stamps.

-mā'ní-ä, a combining form meaning, (a) a (specified) type of mental disorder or manic state, as in *kleptomania*; (b) an excessive, persistent enthusiasm, craving, or liking for, obsession with, or craze for (a specified thing), as in *bibliomania*.

Syn.—madness, insanity, craze, delirium.

man'i-ä'ble, *a.* [Fr., from *manier*, to handle, manage.] that can be handled; tractable.

mā'ní-äc, *a.* [L. *mania*; Gr. *mania*, madness.] mad; raving with madness; raving with disordered intellect.

mā'ní-äc, *n.* a madman; lunatic.

-mā'ní-äc, a combining form used to form adjectives and nouns (referring to persons) from corresponding nouns ending in *-mania*, as in *kleptomania*.

mā'ní-ä'cäl, *a.* of, having, or showing mania; wildly insane; raving.

mā'ní-ä'cäl'ly, *adv.* with madness; in a manic-al manner.

man'ic, *a.* in psychiatry, (a) having or characterized by mania; (b) of or like mania.

man'icäte, *a.* [L. *manicatus*, sleeved, from *manica*, a long sleeve, from *manus*, a hand.] in botany, covered with impubescence so interwoven as to form a kind of mat separable from the surface.

man'ic-de-pres'sive, *a.* designating, of, or having a psychosis characterized by alternating periods of mania and melancholia, or mental depression.

man'ic-de-pres'sive, *n.* a person who has manic-depressive psychosis.

Man'i'chae'än, **Man'i'chē'än**, *a.* relating to Manichaeus or to the Manichaeans.

Man'i'chae'än, **Man'i'chē'än**, *n.* a believer in the teachings of Manichaeus.

Man'i'chae'än-lēm, **Man'i'chē'än-lēm**, *n.* Manichaeism.

Man'i'chae-lēm, **Man'i'chē-lēm**, *n.* a religious philosophy taught from the third century to the seventh century A.D. by the Persian Manes, or Manichaeus, and his followers, combining Zoroastrian, Gnostic Christian, and pagan elements, and based on the doctrine of the two contending principles of good (light, God, the soul) and evil (darkness, Satan, the body).

Man'ichee, *n.* a Manichaean.

Man'i'chē'ist, *n.* a Manichaean.

man'i'cöt'ti, *n.* [It., lit., muffs, pl. of *manicotto*.] pasta, in the form of long, broad tubes, usually boiled, stuffed with cheese, and baked with a tomato sauce.

man'icüre, *n.* [L. *manus*, hand, and *cura*, care.]

1. one who is employed to take care for the hands, particularly the nails. [Rare.]
2. the care of the hands; especially, trimming, polishing, etc. of the fingernails.

man'icüre, *v.t.* and *v.i.*: manicured, *pt.*, *pp.*: manicuring, *ppr.* to take care of (the hands and fingernails); to do the work of a manicurist for (a person or persons).

man'icür'ist, *n.* one who is employed to perform a manicure of the hands or to clean and polish the fingernails.

mā'nid, *n.* one of the *Manidæ*, or anteaters.

man'ifest, *a.* [L. *manifestus*, evident, clear, plain; lit., struck by the hand; *manus*, hand, and *ferere* (used in combination), to strike.] plain; open; clearly visible to the eye or obvious to the understanding; apparent; not obscure or difficult to be seen or understood.

Thus *manifest* to sight the god appeared.

—Dryden.

manifest eyestrain; eye muscle defects which are at once discovered by diffusion tests.

Syn.—clear, plain, obvious, evident.

man'i'fest, *n.* 1. (a) an itemized list of a ship's cargo, telling the place of lading, destination, etc., to be shown to customs officials; (b) a waybill of lading.

2. perishable goods, as livestock, carried by fast freight.
3. (a) a manifestation; (b) a manifesto. [Obs.]

man'i'fest, *v.t.*: manifested, *pt.*, *pp.*: manifest-

ing, *ppr.* [L. *manifestare*, to make plain, from *manifestus*, clear, plain, evident.]

1. to make clear or evident; to show plainly; reveal; evince.
2. to prove; to be evidence of.
3. (a) to enter in a ship's manifest; (b) to show the manifest of (cargo).

man'i'fest, *v.i.* to appear to the senses; to show itself.

Syn.—reveal, show, exhibit, display, declare, discover.

man'i'fest-ä'ble, *a.* that can be made evident.

man'i'fes'tänt, *n.* a person who takes part in a manifestation, or public demonstration.

man'i'fes-tä'tion, *n.* 1. a manifesting or being manifested.

2. something that manifests; as, his silence was a manifestation of cowardice.
3. a public demonstration, as by a government, party, etc., for political effect.

Man'i'fest Des'tiny, the nineteenth-century doctrine that it is the destiny of the Anglo-Saxon nations, especially of the United States, to dominate the entire Western hemisphere.

man'i'fest-ly, *adv.* clearly; evidently; plainly; in a manner to be clearly seen or understood.

man'i'fest-ness, *n.* clearness to the sight or mind; obviousness.

man'i'fes'tō, *n.*: *pl.* man'i'fes'tōes, [It. *manifesto*, an edict, as adj. evident, from L. *manifestus*, clear, plain, evident.] a public declaration of motives and intentions by a government or by a person or group regarded as having some public importance.

man'i'fes'tō, *v.t.* and *v.i.* to issue a manifesto; to affect by a manifesto. [Rare.]

man'i'föld, *a.* [ME. *manifold*, *manyfold*; AS. *manigfeald*; *manig*, many, and *-feald*, -fold.]

1. having many and various forms, features, parts, etc.; as, *manifold* wisdom.
2. of many sorts; many and varied; multifarious; used with a plural noun; as, *manifold* duties.
3. being such in many and various ways or for many reasons; as, a *manifold* villain.
4. comprising, consisting of, or operating several units or parts of one kind; said of certain devices.

man'i'föld, *n.* 1. what is manifold.

2. any of many copies made by manifold-ing.
3. a pipe or tube with at least one inlet and two or more outlets, for connecting one pipe with others, as between the engine and carburetor in an automobile.

man'i'föld, *adv.* with many repetitions; in many ways; over and over. [Obs.]

man'i'föld, *v.t.*: manifolded, *pt.*, *pp.*: manifold-ing, *ppr.* 1. to make manifold; to multiply.

2. to make more than one copy of; as, she will *manifold* the letter with carbon paper.

man'i'föld'ér, *n.* a person or thing that manifold; specifically, a machine for making copies of documents, etc.

man'i'föld'ly, *adv.* in a manifold manner; in many ways. [Rare.]

man'i'föld-ness, *n.* 1. multiplicity.

2. in mathematics, (a) the quality of magnitude in general; (b) the number of different prime factors of a number.

Man'i'hot, *n.* [Mod. L.; Fr., from Braz. (Tupi) *mandioca*.]

1. a genus of tropical American plants found mainly in Brazil, including the cassava, or manioc, from which tapioca is obtained, and others that yield a kind of rubber.
2. [m.] any plant of this genus.

man'i'kin, *n.* [D. *manniken*, a little man; *man*, man, and dim. suffix *-ken*.]

1. a little man; a dwarf.
2. an anatomical model of the human body, usually with movable and detachable parts, used in medical schools, etc.
3. a mannequin.

Mā'ní'l-ä, **mā'ní'l-ä**, *n.* 1. Manila hemp.

2. Manila paper.
3. Manila rope.
4. a kind of cigar made in Manila, the former capital of the Philippines.

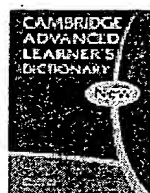
Sometimes spelled *Manilla*.

Manila hemp; a strong fiber from the leaf-stalk of a Philippine tree related to the banana; abacá; it is used for making rope, paper, etc.

Manila paper; a strong, brownish wrapping paper, originally made of Manila hemp, now of various fibers.

Manila rope; strong rope made of Manila hemp.

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Definition

sheet [Show phonetics]

noun [C]

1 a large thin flat especially rectangular piece of something, especially a piece of cloth used for sleeping on:

I've put clean sheets on the bed.

*a sheet **of** glass*

*They fixed a **polythene/plastic** sheet over the broken window.*

2 a piece of paper:

*some sheets **of** wrapping paper*

*The application form was a single sheet **of** paper.*

3 a piece of paper with something printed on it:

The tourist office provides a weekly information sheet about things that are happening in the town.

4 sheet of sth a large wide mass of something such as fire or ice:

*A sheet of **flame** shot up into the air immediately after the explosion.*

*A thick sheet of **ice** had formed over the water.*

sheets [Show phonetics]

plural noun

a large quantity of rain or hail:

*The rain was coming down **in** sheets.*

sheet [Show phonetics]

verb INFORMAL

be sheeting to rain very hard:

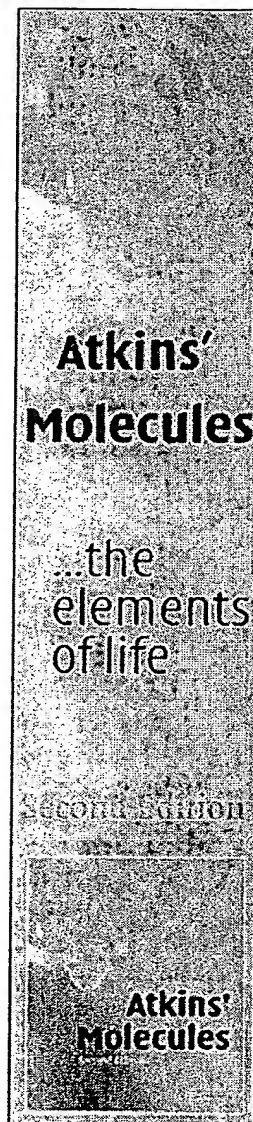
*We can't go out yet, it's sheeting **down** outside.*

*The rain was sheeting **against** the windows.*

sheeting [Show phonetics]

noun [U]

thin material, especially cloth, plastic or metal



sheepshank

sheep'shānk, *n.* 1. the shank of a sheep.
2. a kind of knot used for shortening a rope: see *knot*, *illus.*

3. something thin, scrawny, or weak.

sheep'shead (-hed), *n.* 1. a sheep's head prepared as food.

2. a foolish or stupid person.

3. *pl.* **sheep'shead** or **sheep'sheads**, a large, salt-water food fish, *Archosargus probatocephalus*, with massive head and forepart, two sets of teeth, and a striped body: it is common along the Atlantic coast of the United States; also, any one of several other fishes, as the drum, porgy, moonfish, etc.

sheep'shēar'er, *n.* 1. one who shears sheep.

2. any tool or machine used in shearing sheep.

sheep'shēar'ing, *n.* 1. the act of shearing sheep.

2. the time of shearing sheep; also, a feast held on that occasion.

sheep sil'vēr, a sum of money formerly paid tenants in substitution of the ancient right of keeping a few sheep. [Brit.]

sheep'skin, *n.* 1. the skin of a sheep; especially, a skin dressed with the fleece on it.

2. the parchment or leather prepared from it: diplomas and other documents are sometimes written on parchment.

3. a diploma. [Colloq.]

sheep sor'el, a weed, *Rumex acetosella*, with fleshy, acid-tasting leaves, that grows in dry places.

sheep'ssplit, *n.* split sheepskin leather.

sheep's-wool, *n.* a sponge, *Spongia equina*, found among the Florida Keys.

sheep tick, the *Melophagus ovinus*, a dipterous insect of the family *Hippoboscidae*, that lives as a parasite on sheep.

sheep'walk (-wak), *n.* a pasture for sheep; a place where sheep feed.

sheep'y, *a.* having the appearance of sheep; sheepish.

sheer, *a.* [ME. *schere*, *skere*; Ice. *skær*, bright, clear; Dan. *skær*, pure, clear, bright.]

1. pure; not mixed with anything foreign; unmixed; as, *sheer* ale.

2. thin; transparent; diaphanous: said of textiles; as, *sheer* muslin.

3. absolute; unqualified; downright; as, *sheer* falsehood.

4. straight up and down; perpendicular; precipitous, as the face of a cliff.

Syn.—pure, mere, unmixed, unqualified, unmitigated, absolute, unadulterated.

sheer, *adv.* 1. completely; utterly; outright.

2. perpendicularly or very steeply.

sheer, *n.* thin, fine material, or a garment made of it.

sheer, *v.t.* to shear. [Obs.]

sheer, *v.i.*; **sheered**, *pt.*, *pp.*; **sheering**, *ppr.* [D. *scheren*, to shear, withdraw, stretch.] to deviate from a course, as a ship; to turn aside; to swerve.

to sheer off; to turn or move aside to a distance.

to sheer up; to turn and approach to a place or ship obliquely.

sheer, *v.t.* to cause to turn or sheer.

sheer, *n.* 1. the upward curve or bend of a ship's hull or deck lines as seen from the side.

2. the oblique position in which a ship is sometimes kept at single bow anchor, to keep her clear of it.

3. a swerving course; an abrupt change in a course.

4. the paint strake of a vessel's hull.

to break sheer; to deviate from the position called sheer and risk fouling the anchor.

sheer bat'ten, 1. in shipbuilding, a long strip of wood nailed to the ribs to show the position of the wales or bends before bolting the planks on.

2. same as *sheer pole*.

sheer boom, a boom fixed in a slanting manner across a stream to direct floating logs.

sheer hook, a combination of hooks having the concave curves sharpened: used formerly in naval engagements in order to entangle or cut the enemy's rigging.



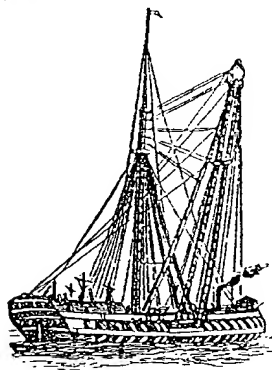
SHEEP TICK (natural size and magnified)



SHEER HOOKS

sheer hulk, an old ship cut down to the lower deck, and fitted with shears or other apparatus for hoisting purposes.

sheer legs, a kind of hoisting apparatus; shears.



SHEER HULK

sheer'ly, *adv.* thoroughly; quite; absolutely.

sheer pōle, an iron rod lashed to the shrouds just above the deadeyes to prevent the shrouds from turning.

sheer strāke, in shipbuilding, the uppermost strake under the gunwale: also called *paint strake*.

Sheer Thurs'day, [Ice. *skiri-thorsdagr*, from *skira*, to cleanse, purify.] Maundy Thursday, the day that precedes Good Friday.

sheer'wa-tēr, *n.* same as *shearwater*.

sheet, *n.* [ME. *schete*; AS. *scete*, a sheet, the fold of a garment, closely allied to AS. *scat*, a nook, a projecting corner.]

1. a large, rectangular piece of cotton, linen, etc., used in pairs as bedding, one above and one below the body.

2. a sail. [Poetic.]

3. (a) a rectangular piece of paper, especially one of a number of pieces cut to a definite, uniform size, as for use in writing, printing, etc.; (b) [pl.] the leaves of a book, magazine, etc., especially when unbound; (c) a newspaper.

4. a broad continuous surface, layer, or expanse, as of flame, water, ice, etc.

5. a broad, thin, usually rectangular piece of any material, as glass, plywood, tin, etc.

6. in geology, any layer or deposit of rock, gravel, soil, ice, etc. that is broad in extent and comparatively thin.

7. in philately, the unseparated block of stamps printed by a single impression of a plate.

8. [pl.] a book or pamphlet. [Rare.]

9. in anatomy, a layer of tissue.

10. in geometry, a portion of any surface, *advance sheets*; sheets of a book or periodical sent out before the day of publication.

in sheets; not bound: said of printed matter as delivered from the press, either flat or folded.

sheet, *v.t.*; **sheeted**, *pt.*, *pp.*; **sheeting**, *ppr.* 1. to cover or furnish with a sheet or sheets.

2. to make into sheets.

to sheet home; to tighten the sheets of (a square sail) so as to extend it against the wind.

sheet, *n.* [from AS. *scelline*, a line attached to the lower corner of a sail.]

1. a rope or chain attached to a lower corner of a sail: it is shortened or slackened to control the set of the sail.

2. [pl.] the spaces not occupied by thwarts, or cross seats, at the bow and stern of an open boat.

a sheet in (or to) *the wind*; slightly drunk. [Slang.]

both sheets or three sheets in (or to) *the wind*; very drunk. [Slang.]

sheet an'chōr, [formerly, *shoot anchor*; lit., one that can be shot out suddenly in case of danger.]

1. a large anchor carried amidships and used only in emergencies.

2. a person or thing to be relied upon in danger or emergency.

sheet bend, in nautical usage, a knot used in fastening a rope to the bight of another rope or to an eye.

shelf

sheet cā'ble, the cable attached to a sheet anchor.

sheet chāin, a chain used as a cable for a sheet anchor.

sheet'ful, *n.* as much as a sheet contains; sufficient to fill a sheet.

sheet'ing, *n.* 1. cloth for sheets; specifically, a wide cotton or linen cloth.

2. material used in covering or lining a surface; as, copper *sheeting*.

3. the process of covering with or forming into sheets.

sheet i'ron (-ūrn), iron rolled thin to the form of a sheet.

sheet light'ning (lit'), a sheetlike illumination caused by lightning whose path of discharge is hidden by clouds, etc.

sheet met'al, metal rolled thin to the form of a sheet.

sheet mū'sic, music printed on unbound sheets of paper.

sheet pile, a pile, generally formed of thick plank, shot or jointed on the edge, and sometimes grooved and tongued, driven between the main or gauge piles of a cofferdam.

sheet rub'ber, latex, freshly coagulated and pressed for drying into thin sheets.

sheik (or *shāk*), *n.* [Ar. *sheikh*, lit., old man, from *shakha*, to grow old.]

1. among Arabs, an old man; hence, the head of a family, clan, or tribe: used as a title of respect; also, one of the higher order of religious persons who preach in Moslem mosques.

2. [from E. M. Hull's novel, *The Sheik*.] a masterful man to whom women are irresistibly attracted. [Slang.]

Also spelled *sheikh*.
sheik ul Islam; the highest Moslem ecclesiastical functionary in Turkey.

sheik'dōm, *n.* the territory ruled by a sheik: also spelled *sheikhdōm*.

sheil'ing, *n.* same as *shealing*.

shei-tān', *n.* same as *shaitan*.

she-kar'ry, *n.* same as *shikari*.

shek'el, *n.* [Heb. *shaqal*, to weigh.]

1. an ancient weight unit used by the Hebrews, Babylonians, etc., equal to about half an ounce.

2. a half-ounce gold or silver coin of the ancient Hebrews.

3. [pl.] money, especially coins. [Slang.]

Shē-kī'nāh, *n.* [Heb. *shekkinah*, from *shakhan*, to dwell.] in Hebrew theology, the manifestation of the presence of God; Divine Presence.

sheld, *a.* piebald; variegated; spotted. [Brit. Dial.]

sheld'ap'ple, *n.* 1. the chaffinch. [Brit. Dial.]

2. the crossbill, *Loxia curvirostra*. [Brit. Dial.]

sheld'fowl, *n.* the sheldrake. [Brit. Dial.]

shel'drāke, *n.*; *pl.* **shel'drakes** or **shel'drāke**, [ME. *sheldrake*, either from *sheld*, a shield, hence, emblazoned, varicolored, and *drake*, or from a ME. cognate of M.D. *schilledre*, variegated.]

1. any of several large European wild ducks, especially the common sheldrake, *Tadorna vulpanser*, or the ruddy sheldrake, *Casarca rutila*, that feed on fish, shellfish, etc. and nest in burrows: the plumage is variegated and often brightly colored.

2. any of several other ducks, especially the merganser.

Also written *shelldrake*, *shieldrake*, *shield-drake*.

shel'duck, *n.* the sheldrake.

shelf, *n.*; *pl.* **shelves** (shelvz). [ME. *schelfe*; M.L.G. *schelf*, set of shelves; AS. *scylfe*, a plank or shelf.]

1. a thin, flat length of wood or other material set horizontally at right angles to a wall and used for holding things.

2. a similar support built into a frame, as in a bookcase or cupboard: usually one of a set.

3. the contents or capacity of a shelf.

4. something like a shelf, as a flat ledge jutting out from a cliff.

5. a sandbar or reef.

6. in mining, bedrock, as under deposits of soil, gravel, etc.

7. in shipbuilding, an inner timber following the sheer of the vessel and bolted to the inner side of the ribs, to strengthen the frame and support the deck beams.

to put or lay on the shelf; to put aside or out of use; to lay aside, as from duty or active service.

PREAMBLE: A Lawyer's Responsibilities

[1] A lawyer, as a member of the legal profession, is a representative of clients, an officer of the legal system and a public citizen having a special responsibility for the quality of justice.

[2] As a representative of clients, a lawyer performs various functions. As advisor, a lawyer provides a client with an informed understanding of the client's legal rights and obligations and explains their practical implications. As advocate, a lawyer zealously asserts the client's position under the rules of the adversary system. As negotiator, a lawyer seeks a result advantageous to the client but consistent with requirements of honest dealings with others. ~~As intermediary between clients, a lawyer seeks to reconcile their divergent interests as an advisor and, to a limited extent, as a spokesperson for each client. A~~ As an evaluator, a lawyer acts as evaluator by examining a client's legal affairs and reporting about them to the client or to others.

[3] In addition to these representational functions, a lawyer may serve as a third-party neutral, a nonrepresentational role helping the parties to resolve a dispute or other matter. Some of these Rules apply directly to lawyers who are or have served as third-party neutrals. See, e.g., Rules 1.12 and 2.4. In addition, there are Rules that apply to lawyers who are not active in the practice of law or to practicing lawyers even when they are acting in a nonprofessional capacity. For example, a lawyer who commits fraud in the conduct of a business is subject to discipline for engaging in conduct involving dishonesty, fraud, deceit or misrepresentation. See Rule 8.4.

[3][4] In all professional functions a lawyer should be competent, prompt and diligent. A lawyer should maintain communication with a client concerning the representation. A lawyer should keep in confidence information relating to representation of a client except so far as disclosure is required or permitted by the Rules of Professional Conduct or other law.

[4][5] A lawyer's conduct should conform to the requirements of the law, both in professional service to clients and in the lawyer's business and personal affairs. A lawyer should use the law's procedures only for legitimate purposes and not to harass or intimidate others. A lawyer should demonstrate respect for the legal system and for those who serve it, including judges, other lawyers and public officials. While it is a lawyer's duty, when necessary, to challenge the rectitude of official action, it is also a lawyer's duty to uphold legal process.

[5][6] As a public citizen, a lawyer should seek improvement of the law, access to the legal system, the administration of justice and the quality of service rendered by the legal profession. As a member of a learned profession, a lawyer should cultivate knowledge of the law beyond its use for clients, employ that knowledge in reform of the law and work to strengthen legal education. In addition, a lawyer should further the public's understanding of and confidence in the rule of law and the justice system because legal institutions in a constitutional democracy depend on popular participation and support to maintain their authority. A lawyer should be mindful of deficiencies in the administration of justice and of the fact that the poor, and sometimes persons who are not poor, cannot afford adequate legal assistance, ~~and~~ Therefore, all lawyers should therefore devote professional time and resources and use civic influence in their behalf to ensure equal access to our system of justice for all those who because of economic or

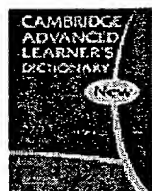
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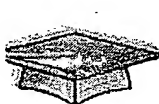
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Quick definitions
(*sheet*)

- **noun**: bed linen consisting of a large rectangular piece of cotton or linen cloth; used in pairs
- **noun**: (nautical) a line (rope or chain) that regulates the angle at which a sail is set in relation to the wind
- **noun**: a flat artifact that is thin relative to its length and width
- **noun**: used for writing or printing
- **noun**: any broad thin expanse or surface (Example: "A *sheet of ice*")
- **noun**: (mathematics) an unbounded two-dimensional shape
- **noun**: newspaper with half-size pages
- **noun**: a large piece of fabric (as canvas) by means of which wind is

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used to propel a sailing vessel

• **verb**: come down as if in sheets

(Example: "The rain was sheeting down during the monsoon")

• **verb**: cover with a sheet, as if by wrapping (Example: "Sheet the body")

• Word origin info is available.

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sheet[2,adjective]
sheet[3,verb]
sheet[4,noun]
balance sheet
cookie sheet



Main Entry: **¹sheet**

Pronunciation: 'shEt

Function: *noun*

Etymology: Middle English *shete*, from Old English *scyte*; akin to Old English *scEat* edge, Old High German *scOz* flap, skirt

1 a : a broad piece of cloth; *especially* : **BEDSHEET** **b** : **SAIL** **1a(1)**

2 a (1) : a usually rectangular piece of paper; *especially* : one manufactured for printing **(2)** : a rectangular piece of heavy paper with a plant specimen mounted on it <an herbarium of 100,000 *sheets*> **b** : a printed signature for a book *especially* before it has been folded, cut, or bound -- usually used in plural **c** : a newspaper, periodical, or occasional publication <a gossip *sheet*> **d** : the unseparated postage stamps printed by one impression of a plate on a single piece of paper; *also* : a pane of stamps **3** : a broad stretch or surface of something <a *sheet* of ice>

4 : a suspended or moving expanse (as of fire or rain) **5 a** : a portion of something that is thin in comparison to its length and breadth **b** : a flat baking pan of tinned

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metal <a cookie *sheet*>

6 : a surface or part of a surface in which it is possible to pass from any one point of it to any other without leaving the surface <a hyperboloid of two *sheets*>

- **sheet-like**  /-ˈʃi:t/ *adjective*

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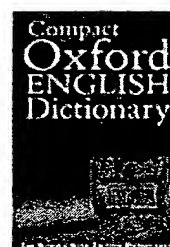
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sheet¹

• **noun 1** a large rectangular piece of cotton or other fabric, used on a bed to cover the mattress or as a layer beneath blankets. **2** a broad flat piece of metal or glass. **3** a rectangular piece of paper. **4** an extensive layer or moving mass of water, ice, flame, etc.

• **verb 1** cover with or wrap in a sheet or sheeting. **2** (of rain) fall heavily.

— ORIGIN Old English, related to SHOOT.



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sheet (1)

sheet (1)

sheet [sheet]noun (*plural* sheets)

1. HOUSEHOLD cloth used on bed: a large rectangular piece of cloth that is used to cover the mattress of a bed or somebody sleeping on the mattress

2. flat thin rectangular piece: a broad flat thin piece of a material, especially a rectangular piece of paper, metal, or glass

3. broad thin expanse: a broad flat thin expanse of a substance, especially ice or water

4. expanse of something moving: a broad expanse of something that is in motion, for example, falling water

5. COOKING flat baking pan: a large flat metal rectangle with very shallow sides or none at all, used for baking

6. STAMPS page of stamps: an entire rectangular page of postage stamps that were printed as a unit

7. PUBLISHING newspaper: a newspaper or

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sheet lightning
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sheet music
sheet pile
sheeting

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periodical, especially one dismissed as trivial

verb (*past sheet-ed, past participle sheet-ed, present participle sheet-ing, 3rd person present singular sheets*)

1. transitive verb put a sheet over: to cover or wrap something in a sheet

2. transitive verb cover with thin layer: to cover something with a thin layer of a material

3. transitive verb make into flat thin pieces: to form something, especially metal, into broad flat thin pieces

4. intransitive verb fall over broad expanse: to fall, flow, or spread out over a broad area

adjective

1. broad, flat, and thin: made in broad, flat, thin, usually rectangular pieces

2. covering thinly: covering a broad area thinly

[Old English *scēte* "cloth." Ultimately from a prehistoric Germanic word meaning "to project" (ancestor also of English shoot, shout, and scuttle).]

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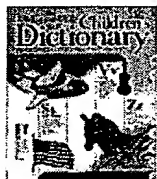
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sheet¹

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Syllables: sheet

Parts of speech: [noun](#) , [transitive verb](#)

Part of Speech noun

 Pronunciation [shĭt](#)

Definition 1. a large rectangular article of bedding, usually of cotton or linen.

Synonyms [bedsheet](#)

Definition 2. a flat, broad covering or expanse.

Example a sheet of ice.

Synonyms [blanket](#) (2) , [layer](#) (1)

Definition 3. a comparatively thin, broad, usu. rectangular unit or shape.

Example a sheet of metal.

Synonyms [plate](#) (3) , [panel](#) (1) , [pane](#) (1.2)


Definition 4. a single piece of paper.

Synonyms [page¹](#) (1) , [leaf](#) (3)Crossref. Syn. [paper](#)

Definition 5. a broad expanse of something such as fire or water.

Synonyms [expanse](#) (1) , [stretch](#) (3)Related [wall](#) , [blanket](#)

Words

 Part of Speech	transitive verb
Inflected Forms	sheeted, sheeting, sheets
Definition	1. to wrap in, supply with, or cover with a sheet.
Synonyms	<u>cover (1)</u> , <u>wrap (1.2)</u>
Similar Words	<u>sheathe</u> , <u>enfold</u> , <u>envelop</u> , <u>enshroud</u> , <u>swathe</u>

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The American Heritage® Dictionary of the English Language: Fourth Edition. 2000.

sheet¹

PRONUNCIATION: shēt

NOUN: 1. A broad rectangular piece of fabric serving as a basic article of bedding. 2a. A broad, thin, usually rectangular mass or piece of material, such as paper, metal, glass, or plywood. b. A flat or very shallow, usually rectangular pan used for baking. 3. A broad, flat, continuous surface or expanse: *a sheet of ice*. 4. A moving expanse: *a sheet of flames*. 5. A newspaper, especially a tabloid. 6. *Geology* A broad, relatively thin deposit or layer of igneous or sedimentary rock. 7. A large block of stamps printed by a single impression of a plate before the individual stamps have been separated. 8. *Mathematics* A surface of revolution generated by revolving a hyperbola about one of its two symmetric axes.

VERB: Inflected forms: **sheet·ed, sheet·ing, sheets**

TRANSITIVE VERB: 1. To cover with, wrap in, or provide with a sheet. 2. To make into sheets.

INTRANSITIVE VERB: To flow or fall in a sheet: *rain sheeting against the windshield*.

ADJECTIVE: Being in the form of a sheet: *sheet aluminum*.

ETYMOLOGY: Middle English *schete*, cloth, from Old English *scēte*. See **skeud-** in Appendix I.

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Dictionary

sheet

Pronunciation: (shēt), [key]

—*n.*

1. a large rectangular piece of cotton, linen, or other material used as an article of bedding, commonly spread in pairs so that one is immediately above and the other immediately below the sleeper.

2. a broad, relatively thin, surface, layer, or covering.

3. a relatively thin, usually rectangular form, piece, plate, or slab, as of photographic film, glass, metal, etc.

4. material, as metal or glass, in the form of broad, relatively thin pieces.

5. a sail, as on a ship or boat.

6. a rectangular piece of paper or parchment, esp. one on which to write.

7. a newspaper or periodical.

8. *Printing and Bookbinding.* a large, rectangular piece of printing paper, esp. one for printing a complete signature.

9. *Philately.* the impression from a plate or the like on a single sheet of paper before any division of the paper into individual stamps.

10. an extent, stretch, or expanse, as of fire or water: *sheets of flame*.

11. a thin, flat piece of metal or a very shallow pan on which to place food while baking.

12. *Geol.* a more or less horizontal mass of rock, esp. volcanic rock intruded between strata or poured out over a surface.

13. *Math.*

a. one of the separate pieces making up a geometrical surface: a *hyperboloid of two sheets*.

b. one of the planes or pieces of planes making up a Riemann surface.

14. *Crystall.* a type of crystal structure, as in mica, in which certain atoms unite strongly in two dimensions to form a layer that is weakly joined to others.

—*v.t.*

1. to furnish with a sheet or sheets.

2. to wrap in a sheet.

3. to cover with a sheet or layer of something.

sheet

Pronunciation: (shēt), [key]

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—*n.*

1. *Naut.*

a. a rope or chain for extending the clews of a square sail along a yard.

b. a rope for trimming a fore-and-aft sail.

c. a rope or chain for extending the lee clew of a course.

2. **three sheets in or to the wind**, *Slang*.intoxicated.

—*v. t.*

Naut. to trim, extend, or secure by means of a sheet or sheets.

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sheet¹  **Pronunciation Key** (shēt)
n.

1. A broad rectangular piece of fabric serving as a basic article of bedding.
2.
 - a. A broad, thin, usually rectangular mass or piece of material, such as paper, metal, glass, or plywood.
 - b. A flat or very shallow, usually rectangular pan used for baking.
3. A broad, flat, continuous surface or expanse: a *sheet of ice*.
4. A moving expanse: a *sheet of flames*.
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8. Mathematics. A surface of revolution generated by revolving a hyperbola about one of its two symmetric axes.

v. **sheet·ed, sheet·ing, sheets**

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2. To make into sheets.

v. intr.

To flow or fall in a sheet: *rain sheeting against the windshield.*

adj.

Being in the form of a sheet: *sheet aluminum.*

[Middle English *schete*, *cloth*, from Old English *scēte*.
See *skeud-* in Indo-European Roots.]

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sheet²  **Pronunciation Key** (shēt) *Nautical*
n.

1. A rope or chain attached to one or both of the lower corners of a sail, serving to move or extend it.
2. **sheets** The spaces at either end of an open boat in front of and behind the seats.

intr.v. **sheet-ed**, **sheet-ing**, **sheets**

To extend in a certain direction. Used of the sheets of a sail.

Idiom:

three sheets to the wind *Informal*

Intoxicated; drunk.

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[Middle English *shete*, from Old English *scēat* (line), *sheet* (line), from *scēata*, corner of a sail. See *skeud-* in Indo-European Roots.]

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sheet

see three sheets to the wind; white as a sheet.

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Main Entry: **sheet** :

Pronunciation: 'shEt

Function: *noun*

1 : a broad piece of cloth; *especially* : an oblong of usually cotton or linen cloth used as an article of bedding

2 : a portion of something that is thin in comparison to its length and breadth <a *sheet* of connective tissue>

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sheet

n 1: any broad thin expanse or surface; "a sheet of ice"

2: used for writing or printing [syn: piece of paper, sheet of paper] 3: bed linen consisting of a large rectangular

piece of cotton or linen cloth; used in pairs [syn: bed sheet] 4: (mathematics) an unbounded two-dimensional

shape; "we will refer to the plane of the graph as the X-Y plane"; "any line joining two points on a plane lies wholly on that plane" [syn: plane] 5: newspaper with

half-size pages [syn: tabloid, rag] 6: a flat artifact that is thin relative to its length and width [syn: flat solid] 7:

(nautical) a line (rope or chain) that regulates the angle

at which a sail is set in relation to the wind [syn: tack, mainsheet, weather sheet, shroud] 8: a large piece of fabric (as canvas) by means of which wind is used to propel a sailing vessel [syn: sail, canvas, canvass] v 1: come down as if in sheets; "The rain was sheeting down during the monsoon" 2: cover with a sheet, as if by wrapping; "sheet the body"

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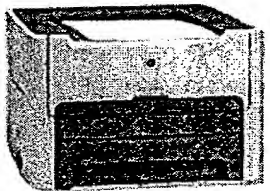
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sheet (1)

O.E. *sciete* (W.Saxon), *scete* (Mercian) "cloth, covering," from P.Gmc. **skautijon*, from base **skauta-* "project" (cf. O.N. *skaut* "corner of cloth," Goth. *skauts* "seam, hem of a garment;" Du. *shoot* Ger. *Schoß* "bosom, lap"), from PIE base **skeud-* "to shoot, chase, throw" (see **shoot**). Sense of "piece of paper" first recorded 1510; that of "any broad, flat surface" (of metal, open water, etc.) is from 1592. Of falling rain from 1697. Meaning "a newspaper" is first recorded 1749. *Sheet lightning* is attested from 1794; *sheet music* is from 1857. *Between the sheets* "in bed" (usually with sexual overtones) is attested from 1599; to be *white as a sheet* is from 1751.

sheet (2)

"rope that controls a sail," O.E. *sceatline* "sheet-line," from *sceata* "lower part of sail," originally "piece of cloth," from same root as **sheet** (1) (q.v.). The sense transferred to the rope by 1294. This is probably the notion in phrase *three sheets to the wind* "drunk and disorganized," first recorded 1821, an image of a sloop-rigged sailboat whose three sheets have slipped through the blocks are lost to the wind, thus out of control.

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sheet *n.* sheets < [sh]Et > : 1. A flat man-made object that is thin relative to its length and width; **SYN**: flat solid. 2. A large rectangular piece of cotton or linen cloth; used in pairs for bed linens; **SYN**: bed sheet. 3. A line (*rope or chain*) that regulates the angle at which a sail is set in relation to the wind; **SYN**: tack, mainsheet, weather sheet, shroud. 4. Any broad thin expanse or surface: "a sheet of ice." 5. A piece of paper used for writing or printing; **SYN**: paper, sheet of paper, leaf, folio, page. [ETYM: Old Eng. *shete*, *schete*, AS. *scēte*, *scyte*, from *sceāt* a projecting corner, a fold in a garment (akin to Dutch *schoot* sheet, bosom, lap, German *schoos* bosom, lap, flap of a coat, Icel. *skaut*, Goth. *skauts* the hem of a garment).]

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sheet *v.* sheeted ◊ sheeting ◊ sheets < [sh]Et > : 1. To cover with a sheet, as if by wrapping; "sheet the body." 2. To come down as if in sheets; "The rain was sheeting down during the monsoon."

Expressions:

sheet anchor *n.* < [sh]Et 'á[ng]k&r > : 1. Spare, for use in emergency; **SYN**: waist anchor.

sheet bend *n.* < [sh]Et bēnd > : 1. A hitch used for temporarily tying a rope to the middle of another rope (*or to an eye*); **SYN**: becket bend, weaver's knot, weaver's hitch.

sheet iron *n.* < [sh]Et 'l&rn > : 1. Plate iron thinner than tank iron.

sheet lighting *n.* : 1. Lightning that appears as a broad sheet; due to reflections of more distant lightning and to diffusion by the clouds.

sheet metal *n.* < [sh]Et 'mēt&l > : 1. Metal formed into a thin plate.

sheet music *n.* < [sh]Et 'myüzik > : 1. A musical composition in printed or written form; **SYN**: music.

sheet pile *n.* < [sh]Et pll > : 1. One of a row of piles driven side by side to retain earth or prevent seepage; **SYN**: sheath pile, sheet piling.

sheet web *n.* : 1. An irregular spider web woven in a single plane and looking like flattened hammocks.

balance sheet *n.* < 'bál&ns [sh]Et > : 1. A record of the financial situation of an institution on a particular date by listing its assets and the claims against those assets.

cheat sheet *n.* : 1. A small piece of paper upon which one has recorded the answers to a test, and which one has used during the test. 2. A small piece of paper upon which one has recorded essential study information, and which one uses to prepare for a test.

crib sheet *n.* : 1. See "cheat sheet."

dope sheet *n.* : 1. A racing publication giving information on horses; **SYN**: scratch sheet.

fitted sheet *n.* < 'fitid [sh]Et > : 1. A sheet (*usually with elastic edges*) tailored to fit a particular mattress; **SYN**: contour sheet.


lead sheet *n.* < lēd [sh]Et > : 1. A sheet containing the words and melody for a song (*and some indication of harmony*) written in simple form.

tear sheet *n.* < tēr [sh]Et > : 1. A sheet that can be easily torn out of a publication.

time sheet *n.* < tlm [sh]Et > : 1. A record of the hours worked by employees.

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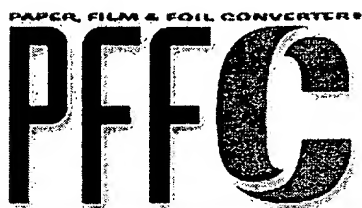
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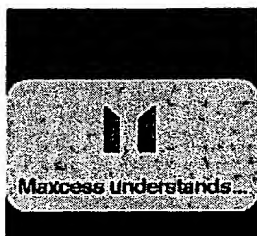
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A Proposal for Spreading Base Web During Melt Extrusion

William E. Hawkins, Contributing Editor

Apr 1, 2001 12:00 PM

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ARTICLES BY CATEGORY

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Melt extruded resin polymers on cloth and other webs sometimes result in transverse direction (TD) curl of the laminate. And this curl often causes poor roll formation when the base roll is slit into large-diameter, narrow-width slit rolls.

TD curl often is severe enough to cause the narrow-width slit rolls to dish dramatically as they are wound. This column in the February 2000 issue of *PFFC* suggested that TD curl would be present if the following relationship between laminated webs was not true:

$(\text{The thickness of web \#1})^2 \times (\text{stress/strain modulus of web \#1}) = (\text{the thickness of web \#2})^2 \times (\text{stress/strain modulus of web \#2})$.

This relationship must be true for melt extruded laminates also.

When a resin is extruded onto the base web, the melt shrinks as it cools to a solid. Heat is transferred from the melt through the base web to the cooling drum. Thus the base web experiences both machine direction (MD) and TD thermal expansion before the melt is cooled to a solid.

Thermal expansion of the base web is kept to a minimum by heat transfer efficiency of the cooling drum surface and the thermal conductivity of the base web. Often, the total resin contraction from cooling is great enough to cause inward directed transverse forces that are applied to the top surface of the base web. These forces tend to cause the base web to curl. See Figure 1.

TD curl might be reduced significantly in some melt extruded products if the base web could be elongated in the TD just as the melt touches down and held in the elongated TD configuration while the melt solidified. If such a process could be designed, there should be a more nearly balanced TD length of both webs when the TD tension is removed, since the base web would contract more than from thermal forces alone.

I propose the following concept that might be helpful to those converters that are suffering significant curl problems with their melt extrusion products:

TD tensioning of the base web might be achieved by utilizing opposing banks of close-coupled, narrow-width, tandem-mounted, angled spreading wheels with individual spring suspensions that operate on the outside edges of the base web (just outside the melt border).

Spreading would start before melt touchdown and continue around the cooling

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drum for however many degrees it takes for the melt to fully solidify. The spreading rolls would have to be covered with an elastomer that can operate at a high temperature. The wheels could be cooled if necessary. If more than 180 deg of wrap is required for the melt to solidify, then the spreading roll bank mountings could be split for engaging and disengaging.

Each spreading roll should apply about the same down pressure on the base web edge. The banks of spreading rolls would be mounted on horizontal sliding rails and be operated pneumatically so they would engage the base web edges automatically or manually. The spreading angle should be remotely adjustable so the operator could optimize the amount of base web TD elongation.

One negative with this concept is that more non-coated base edge is needed (about 1 in. each side) to provide a working surface for the TD spreading rolls. This requirement would result in more trim waste than is experienced with standard processes. However, if your process is in jeopardy from TD curl problems, this concept might be worth trying. The concepts are outlined in Figures 2 and 3.

William E. Hawkins has 30-plus years of process and equipment development in web handling, including experience on all types of converting equipment. He specializes in thin web applications. Contact him at 740/474-5840; email: fhswhawk@bright.net.

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